

# Graphics Editor MATES STUDIO

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# Introduction

Mates Studio provides a graphics editor for its Architect, Genius and Builder environments. This provides the ability to create custom page designs using various widgets supported by the BBM display modules. The interface is composed a graphics toolbar and three main editor tools.



#### 1. Page Selection

Provides a simple interface to add pages and select a page for editing.

#### 2. Visual Editor

Provides a drag-n-drop interface for selecting and positioning widgets.

#### 3. Property Editor

Provides an editable property table for editing page and widget parameters

# **Graphics Toolbar**

The graphics toolbar provides buttons and dropdown menus for managing pages and widgets.

		-		
+ 🖻 X 🖷 🔟	I. 🕹 🛛	ſ	Page0	•

From left to right, the toolbar items are described in the table below:

ltem	Description
Copy Page	Copies the selected page for pasting
Paste Page	Pastes the recently copied page to the current project
Capture Page	Saves a snapshot of the selected page as an image file
Delete Page	Deletes the selected page
Add Widget	Opens a Select Widget window
Copy Widget	Copies the selected widget for pasting
Cut Widget	Copies the selected widget for moving to another page
Paste Widget	Pastes the recently copied widget
Delete Widget	Deletes the selected widget
Load Configuration	Loads a widget or page configuration file
Save Configuration	Saves the selected a widget or page as a configuration file
Paste Code	Pastes a code snippet for the widget/page in the current cursor position in the text editor (only available in Genius)
Page/Widget Select	Lists the page and the widgets in the selected page for selection

# **Designing a Project**

This section discusses the common procedures when designing the user interface for Architect, Genius and Builder projects.

### **Styling Pages**

New Mates Studio projects, excluding Commander, includes a blank page with a default black background color.



### **Background Type**

Each page can have either a background color or image.

1. ±	Page0	-
Property	Value	
Name	Page0	
Туре	Color	•
Color	Color	
Image	Image	

Select the desired background **Type** for your page.

#### **Background Color**

If the Page's background **Type** is **Color**, the **Color** property can be modified with a custom color value as shown.



#### Background Image

If the Page's background **Type** is **Image**, the **Image** property can be modified by clicking the value cell and selecting an image file.



After selecting a file, this is embedded into the project and the filename is displayed as shown.

1. Ł	Page0	•
Property	Value	
Name	Page0	
Туре	Image	•
Color	#000000 [0x0000]	
Image	background.jpg	

The image will be used as the background as shown in the Page Editor.



### **Add Pages**

To add a new page, simply click in the Add Page button.



This will open the **Select Template** window that provides a selection of simple page background designs.

Templates are categorized into two types: Background and Application templates

### **Background Templates**

Select Template	Background Application
	Cancel Select

Background templates are simple designs which helps generate basic layouts using background widgets.

elect Template		Background	Application	
Audio	5 Gauge EQ			
Date and Time	A page layout designed to be use	ed in Audio app	lications	
Distance	Bar Meter LedDigits A page layout designed to be use	ed in Audio app	lications	
Electrical	db Meter - AVG and PEAK LR A page layout designed to be use	ed in Audio app	lications	
Environmental	dB Meter - Left and Bight Blue	in the second second second		
Graphs	A page layout designed to be use	ed in Audio app	lications	
Miscellaneous	dB Meter - Left and Right Dual A page layout designed to be use	ed in Audio app	lications	ABCDE
Motion	dB Meter - Left and Right			
Multimedia	A page layout designed to be use	ed in Audio app	lications	
Navigation	dB Meter Single Led Bar A page layout designed to be use	ed in Audio app	lications	
Notifications	LCD Bar Meter A page layout designed to be use	ed in Audio app	lications	
User	Media Spectrum L to R A page layout designed to be use	ed in Audio app	lications	
	Media Spectrum A page layout designed to be use	ed in Audio appl	lications	
	Metal Bar Meter Single	d in Audio and	licationa	

### **Application Templates**

Application templates are designs for common use cases. These designs are also available in Commander environment.

### **Delete Pages**

Pages can be deleted by clicking the Delete Page button while the target page is selected.



A confirmation window will open. Simply click **Yes** to proceed or **No** to cancel.



#### Note

Deleting a Page performs an automatic page and widget renumbering. Therefore, it is best to complete the user interface design before developing code.

### Add Widgets

To add a widget to the active page, click the Add Widget button.



This will open the **Select Widget** window

	SELECT WIDGET	CLOSE
Static	Label	
Led	Simple Text Label Widget	
Gauges	Scale         Numerical Scale Widget	
Media	Panel	
Digits	Simple Rectangular Panel Widget	
Graphs	Media Panel         Image: Configurable Panel Widget	
Buttons	Symbol A Simple Static Icon Widget	
Sliders		
Knobs	Custom Image Widget	
Special		

This window provides the option to either select a widget with its default property values or select a pre-made template with custom designs from the BBM team and community.

#### 🖍 Note

Adding a widget performs an automatic widget renumbering. Therefore, it is best to complete the user interface design before developing code.

### **Default Styles**

The Select Widget window opens with category and list of available widgets. This selection includes and creates the widgets' default styles.

Select the widget category from the tabs on the left.

	SELECT WIDGET	CLOSE
Static	Label Simple Text Label Widget	
Gauges	Scale Numerical Scale Widget	
Media	Panel Simple Rectangular Panel Widget	
Graphs	Media Panel Highly Configurable Panel Widget	
Buttons	Symbol A Simple Static Icon Widget	
Knobs	Image Custom Image Widget	
Special		
BROWSE TEM	PLATES	

Select the widget type from the list.

	SELECT WIDGET	CLOSE
Static	Gauge A	
Led	Simple LED Bar Gauge Widget	
Gauges	Gauge B Simple Linear Gauge Widget	
Media	Gauge C	
Digits	Simple Linear Gauge Widget	
Graphs	Gauge D Simple Linear Gauge Widget	
Buttons	Gauge E	
Sliders	Simple Linear Gauge Widget	
Knobs	Gauge F Simple Linear Gauge Widget	
Special	Angular Meter Traditional Angular Meter Widget	
	Ruler Gauge Ruler-style Linear Gauge Widget	

BROWSE TEMPLATES

Click **CONFIRM** to proceed.

### Widget Templates

Click **Browse Templates** to change the selection to the pre-designed widgets.

	SELECT WIDGET	CLOSE
Static	Label	
Led	Simple Text Label Widget	
Gauges	Scale           Numerical Scale Widget	
Media	Panel	
Digits	Simple Rectangular Panel Widget	
Graphs	Media Panel Highly Configurable Panel Widget	
Buttons	Symbol	
Sliders	Image	
Knobs	Custom Image Widget	
Special		

This will display available widget templates listed per category.

	SELECT WIDGET TEMPLATE	BAC
Buttons	MediaButton - Black and White	
Digits	A MediaButton widget created on 6/8/2021	
Gauges	MediaButton - Black Halfmoon Down Raised           A MediaButton widget created on 6/9/2021	
Graphs	MediaButton - Black Halfmoon Left Raised	
Knobs	A MediaButton widget created on 6/9/2021	
Led	MediaButton - Black Halfmoon Right Raised A MediaButton widget created on 6/9/2021	
Media	MediaButton - Black Halfmoon Up Raised A MediaButton widget created on 6/9/2021	
Sliders	MediaButton - Black Round	
Text	A MediaButton widget created on 6/9/2021	
	MediaButton - Blue with Circular Suva Grey Bevel           A MediaButton widget created on 6/9/2021	
	MediaButton - Blue with Squared White Bezel	

	SELECT WIDGET TEMPLATE	BACK
Buttons	MediaButton - Black and White	
Digits	A MediaButton widget created on Tue Jun 08 2021	
Gauges	MediaButton - Black Halfmoon Down Raised A MediaButton widget created on Wed Jun 09 2021	
Graphs	MediaButton - Black Halfmoon Left Raised	
Knobs	A MediaButton widget created on Wed Jun 09 2021	
Led	MediaButton - Black Halfmoon Right Raised A MediaButton widget created on Wed Jun 09 2021	
Media	MediaButton - Black Halfmoon Up Raised A MediaButton widget created on Wed Jun 09 2021	
Sliders	MediaButton - Black Round	
Text	A MediaButton widget created on Wed Jun 09 2021	
	MediaButton - Blue with Circular Suva Grey Bevel A MediaButton widget created on Wed Jun 09 2021	
	MediaButton - Blue with Squared White Bezel	

Select the template design from the list.

	SELECT WIDGET TEMPLATE	BACK
Buttons	Leaspectrum - Light Brown A LedSpectrum widget created on Wed Jun 09 2021	
Digits	LedSpectrum - Olivine	
Gauges	A LedSpectrum widget created on Wed Jun 09 2021	
Graphs	LedSpectrum - Red to Green         A LedSpectrum widget created on Wed Jun 09 2021	
Knobs	LedSpectrum - Red	
Led	A LedSpectrum widget created on Wed Jun 09 2021	
Media	LedSpectrum - Watercourse           A LedSpectrum widget created on Wed Jun 09 2021	
Sliders	MediaSpectrum - Red and Cavern Pink	
Text	A MediaSpectrum widget created on Wed Jun 09 2021	
	MediaSpectrum - Red to Green A MediaSpectrum widget created on Wed Jun 09 2021	
	Scope - Green A Scope widget created on Wed Jun 09 2021	

Click **CONFIRM** to proceed.

### **Styling Widgets**

Widget properties, including color, part count, size, minimum and maximum value, can be modified from the property editor.

1. Ł	GaugeA0 🗸
Property	Value
Name	GaugeA0
Left	0
Тор	0
Width	158
Height	30
Minimum Value	0
Maximum Value	100
Bar Spacing	1
Bar Thickness	2
Base Color	#181C18 [0x18E3]
Partition 1 Percentage	50
Partition 1 Inactive Color	<b>#</b> 005000 [0x0280]
Partition 1 Active Color	#00FC00 [0x07E0]
Partition 2 Percentage	75
Partition 2 Inactive Color	<b>#</b> 505000 [0x5280]
Partition 2 Active Color	#F8FC00 [0xFFE0]
Partition 3 Inactive Color	<b>#</b> 500000 [0x5000]

### **Copy Widgets**

Select the target widget



While the target widget is selected, press the **Copy Widget** button as shown. This operation can also be done using the shortcut keys **Alt+C**.



If the widget is to be copied to another page, navigate to the target page.



After copying a widget, press the **Paste Widget** button as shown. This operation can also be done using the shortcut keys **Alt+V**.



The widget will be copied at the same position and will be automatically selected. Drag the widget to your desired position.



### **Move Widgets Across Pages**

Besides Copy, a Cut option is also provided which allows widgets to be moved to a different page.

Select the target widget



While the target widget is selected, press the **Cut Widget** button as shown. This operation can also be done using the shortcut keys **Alt+X**.



Navigate to the target page.



After performing a cut operation, press the **Paste Widget** button as shown. This operation can also be done using the shortcut keys **Alt+V**.



The widget will be moved to the target page at the same position and will be automatically selected. Drag the widget to your desired position.



#### Note

Moving a widget performs an automatic widget renumbering. Therefore, it is best to complete the user interface design before developing code.

### **Delete Widgets**

Widgets can be deleted by clicking the *Delete Widget* button while the target widget is selected.

+	Ľ	Ж	ľ.	Ē	
				he	Delete Widget

A confirmation window will open. Simply click **Yes** to proceed or **No** to cancel.





# **Configurations Files**

Pages and widgets can be saved as configuration files (*matesWidget* and *matesPage*) for future use. This allows users to reuse their designs or share it with other users or the community.

### **Save Configuration**

Select the target widget or the current page

Page0	•
Page0	
GaugeA0	2

While the target item is selected, press the Save Configuration button as shown.

1.	<u>î</u>	GaugeA0	•
Property	Save Configuration		
Name		GaugeA0	

Provide a short description for the widget or page.

A	GaugeA	widget	created	on	Mon	Aug	03	2021

Click the **Confirm** button to confirm.

This will open the Save Configuration window.

Save Widget Configurat	tion					>	<
$\leftrightarrow \rightarrow \cdot \cdot \uparrow$	→ This PC → Docu	uments > Mates Studio Wid	lgets	ٽ ~		tes Studio Widgets	
Organize 🔻 New	/ folder					::: • ?	ġ.
<ul> <li>Quick access</li> <li>Desktop</li> <li>Downloads</li> <li>Documents</li> <li>Pictures</li> <li>Downloads</li> <li>Mates Studio D</li> <li>Mates Studio P</li> <li>Mates Studio P</li> <li>This PC</li> <li>Network</li> </ul>	Nam	le ^	Date modified No items match your	Type r search.	Size		
File <u>n</u> ame:	MyTemplateWidget	t				· · · · · · · · · · · · · · · · · · ·	-
Save as type:	Mates Studio Widge	ets (*.matesWidget)				``	1
∧ Hide Folders					<u>S</u> ave	Cancel	

Input an appropriate filename for the configuration and click on **Save** button.

### Load Configuration

A previously saved widget or page configuration can be loaded and added to the current project. To start simply press the **Load Configuration** button as shown.

🗘 🕹 🏦	GaugeA0	-
Prop Load Confi	iguration <b>ue</b>	
Name	GaugeA0	

#### This will open a **Open Configuration** window.

$\rightarrow$ $\uparrow$ $\uparrow$ $\square$ > This PC	> Documents > Mates Studio Widgets		5 V		Mates Studio Widgets
rganize 🔻 New folder					EE • 🔟 🕐
10:1	Name	Date modified	Туре	Size	
Desktop	MyTemplateWidget.matesWidget	9/6/2021 9:32 PM	MATESWIDGET File	1 KB	
Downloads	*				
Pictures	e .				
Mates Studio Document	F (				
Mates Studio Pages					
Mates Studio Widgets					
Mates Studio Widgets This PC					
Mates Studio Widgets This PC Network					
<ul> <li>Mates Studio Widgets</li> <li>This PC</li> <li>Network</li> <li>File name</li> </ul>	MyTemplateWidget.matesWidget		~	Mates Studio	Resources (*.mate ~

Navigate to the configuration file and click **Open** to continue.

The widget will be added and will be automatically selected. Drag the widget to your desired position.



# **Mates Widgets Compatibility**

The table below lists the available widgets that applies to setWidgetValue, getWidgetValue, setWidgetParam and getWidgetParam functions.

Widget	Value
MATES_LED	0
MATES_RULER_GAUGE	1
MATES_ANGULAR_METER	2
MATES_GAUGE_A	3
MATES_GAUGE_B	4
MATES_LED_DIGITS	5
MATES_LABELS	6
MATES_BUTTON_A	32
MATES_SWITCH_A	33
MATES_SLIDER_B	34
MATES_KNOB	35
MATES_MEDIA_LED	64
MATES_MEDIA_COLOR_LED	65
MATES_GAUGE_C	66
MATES_GAUGE_D	67
MATES_GAUGE_E	68
MATES_GAUGE_F	69
MATES_MEDIA_GAUGE_A	70
MATES_MEDIA_GAUGE_B	71
MATES_MEDIA_GAUGE_C	72
MATES_MEDIA_GAUGE_D	73
MATES_MEDIA_THERMOMETER	74

Widget	Value
MATES_LED_SPECTRUM	75
MATES_MEDIA_SPECTRUM	76
MATES_SCOPE	77
MATES_SYMBOLS	78
MATES_ROTARY_GAUGE	79
MATES_BUTTON_B	96
MATES_SWITCH_B	97
MATES_MEDIA_BUTTON	98
MATES_SLIDER_A	99
MATES_SLIDER_C	100
MATES_SLIDER_D	101
MATES_SLIDER_E	102
MATES_SLIDER_F	103
MATES_MEDIA_SLIDER	104
MATES_MEDIA_ROTARY	105
MATES_SLIDE_SHOW	128
MATES_ANIMATION	129
MATES_FANCY_LED_A	130
MATES_FANCY_LED_B	131
MATES_FANCY_BUTTON_A	160
MATES_FANCY_BUTTON_B	161

#### Note

Some widgets available in Mates Studio behaves differently than majority of the widgets. Such widgets doesn't apply for the common set and get widget value and parameter functions.